Towards a Phenomenological Ontology: Synthetic A Priori Reasoning and the Cosmological Anthropic Principle

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The purpose of this paper is to analyze the theoretical commitments of autopoietic enactivism in relation to Errol E Harris's dialectical holism in the interest of establishing a common metaphysical ground. This will be undertaken in three stages. First, it is argued that Harris's reasoning provides a means of developing enactivist ontology beyond discussions limited to cognitive science and into domains of metaphysics that have traditionally been avoided by phenomenologists. Here, I maintain enactivist commitments are consistent with Harris's reasoning from certain synthetic a priori first principles, to his derivation of a teleological anthropic principle, which asserts the necessity of consciousness within the cosmos. Second, it is proposed that Steven Rosen's long-standing proposal for a topology of phenomenology may provide a common logical foundation for both Harris and enactivists regarding anthropic reasoning. Third, it is argued that a pragmatic approach to process ontology is the most rigorous way of responding to the realism/anti-realism concerns that inevitably follow. If successful, this work will update Harris's arguments with contemporary scientific and philosophical terminology and extend enactivism from philosophy of mind, into a general phenomenological ontology.

Keywords: synthetic a priori, phenomenological ontology, anthropic reasoning

What characteristically distinguishes the phenomenological study of mind from the analytic approach is that the latter endeavours to answer particular questions about the nature of mind by examining the logical support for respective metaphysical theses (e.g., dualism, functionalism, identity theory) before any attention is paid to experience. Phenomenology brackets these metaphysical arguments and endeavours to clarify the structures and conditions (the how) of experiences themselves. What is distinctive of Harris's approach is that

while embracing this move to bracket metaphysical assumptions, he ends up re-establishing an ontological foundation in and through his examination of the conditions of experience. In this section, I propose that both contemporary phenomenological methods and Harris's metaphysical system can be initially linked via an appeal to pragmatic process ontology. Doing so, I maintain, provides a path towards developing a novel phenomenological ontology.

Contemporary Phenomenology

To set the stage for Harris's metaphysics I begin by considering how he interpreted Husserl's logic to support his own system. In his *Formal, Transcendental and Dialectical Thinking* (1987), Harris notes the importance of Husserl's contention that all objects of awareness occur within the context of a horizon or lifeworld (*die Lebenswelt*), which endows our objects with meaning by enabling relations with other objects. Harris claims that Husserl's requirement of such "systematic relations between different presentations, both of the object concerned and of others with which it is associated or connected" is suggestive of "a coherence theory of truth" (p. 96). With this anti-foundational starting point, Harris proceeds through a traditional phenomenological methodology, but through a series of criticisms and assertions is able to reach some dramatically alternative conclusions.

Epoché. Husserl (see 1982, 1989) posited this first step in a phenomenological method to bracket our acceptance of the "natural attitude," that there exists an objective physical world, along with any other metaphysical presuppositions. The purpose is to suspend any potentially dogmatic attitudes about experience and reality. Importantly, this is not an all-or-nothing task and once achieved, it must be continually enacted or sustained. Contemporary phenomenologists within cognitive science (enactivists) follow Merleau–Ponty in maintaining that "consciousness ultimately calls for a transcendental clarification that goes beyond common-sense postulates and brings us face to face with the problem concerning the constitution of the world" (Gallagher and Zahavi, 2012, p. 26). By "transcendental," enactivists invoke a post-Kantian framework, in which our cognitive apprehension of reality does not mirror a pre-existing world but establishes the necessary conditions of a reality that already includes consciousness. This step is complementary with science because it provides a means of clarifying the constitution, or genesis of any "objectivity" that might be posited.

Phenomenological reduction. The aim of the reduction is to analyze the correlational interdependence between specific structures of subjectivity and modes of givenness. This method is meant to clarify how the objects appear to our consciousness when they are imagined, remembered, hallucinated, dreamed, etc. Here, the focus is on the presentation of our objects, our cognitive and emotional accomplishments, and the intentional structures at play. An

implication of this method is the rejection of any attempt to fit consciousness into a pre-established natural framework, since this assumes mind is yet another object that can be exhaustively analyzed within a natural attitude. As Gallagher and Zahavi point out, in philosophy of mind the assumption has often been that a better understanding of the physical world will provide a better understanding of consciousness, but they rightly maintain, "a better understanding of consciousness might allow for a better understanding of what it means for something to be real" (2012, p. 27).

Eidetic variation. Husserl proposed this step as an imaginative exercise of drawing out the invariant characteristics of things in our experience. We might ask, "what can vary about X such that it would still remain essentially the same?" Although this can be applied to objects we experience in the world, it can also be directed toward cognitive acts themselves, such as imagining, dreaming, empathizing, etc. With this in mind, contemporary phenomenologists propose an open-ended approach to grasping certain necessary features of phenomenal experience (to be elaborated below).

On Harris's account however, while these traditional phenomenological tools provided a great deal of support for his metaphysics, they were ultimately found inadequate on their own to produce the kind of ontological principles he desired:

> The constitutive activity which Husserl seeks to describe is apparently one of interpretation and judgment, informed and supported by a background of knowledge, a context (or "horizon") systematically constructed in the course of experience according to principles of order which are a priori — that is, inherent in the intentional performance of the transcendental subject. This is all very Kantian and, so far as it goes, is none the worse for being so. But the system, whether of categories, constitutive activity, or experience as a finished product emerges from Husserl's exposition with any degree of clarity only in some few cases [….] For the most part, the principles are not definitively revealed nor the logical structure of the intentional operations described in sufficient detail or with the requisite degree of precision. (1987, pp. 102–103)

Specifically, Harris goes on to claim that despite the protests from his followers, "Husserl's transcendentalism is ineradicably subjective" (p. 113). In response, it may be noted that today, phenomenologists seek intersubjective variation to corroborate their analyses. This concerns the replication of some phenomenal structures over time and across subjects. Indeed, the effort to establish the invariant structures and conditions of experience cannot be achieved on an independent basis since, in doing so, we would have no way of safeguarding against our taking idiosyncrasies to be universal. Indeed, insofar as we rely upon language to conduct our analyses, we are already endeavoring upon a collective exploration.

Nevertheless, Harris argues that even if the subjectivism of traditional phenomenology is avoided, a much deeper problem awaits:

> Accordingly, my transcendental ego is not the same as my psychophysical self, although I say "I" in both cases, for the content of each differs from that of the other. The transcendental "I" is prior to all possible objects, whereas my psychophysical self is an object experienced in part introspectively and in part through outer sense. (1987, p. 113)

The problem for Husserl and contemporary phenomenologists is that the intersubjective world that gives rise to objectivity is essentially constituted by one's own transcendental awareness. If we also wish to maintain that some objective world has given rise to our transcendental awareness, irrespective of what kind of world that is, then each becomes necessarily prior to the other. This is what I call the "priority problem," which is indeed a centrally motivating issue for the present paper, and with Harris I intend not to dissolve or avoid this problem, but rather to embrace it as a means of articulating a phenomenological ontology.

Process, Pragmatism, and the Nature of Gestalts

From the above discussion, three conditions universal to phenomenology, can now be informally sketched. The first is perspectival incompleteness, which immediately generates some assumptions and anticipations about what remains just beyond a given experience, whether spatially or temporally (protention). For example, the imagination of the opposite side of an observed object may be implicit in the initial observation. The second is the fundamental temporality that is involved in tying various perceptions together into a synthetic whole (retention). This is because traversing space, even in a mental act, involves extension through time. What incompleteness and temporality have in common is a third gestalt feature of perception, which is the wholistic quality inherent in any distinction of a salient object from a relatively vague background.

According to the proponents of gestalt psychology, such wholes were not imposed on experience by the mind, but were discovered: "Gestalts were objective, not subjective […] physically real, natural self-organizations in nature, in the brain, and in experience, all of them isomorphic to one another" (Leahey, 2000, p. 272). Drawing heavily from this reasoning, Harris maintains there is indeed an isomorphism between phenomenal and physical wholes, but we ought to focus upon their dynamics, looking for their "laws of organization […] not physical forces but dynamic principles governing the way in which phenomena group themselves into patterns and parts are drawn together into wholes" (1965, p. 393). Although it would be more accurate within Harris's system to exchange "isomorphism" with "homeomorphism," the connection between gestalt theory and Harris's metaphysics is so significant that one could summarize his work as an effort to establish the underlying process by which such wholes are generated within phenomenology and across all the natural sciences. On Harris's account, insofar as we can identify

such a common process across all phenomena, we ought to be realists in line with Hegel's objective idealism. I contend there is a better path in pragmatism.

In C.S. Peirce's epistemology, Hegel's grand conclusion about our capacity to apprehend the whole of nature via reason is rejected. In place of which, Peirce proposed the pragmatist maxim: we should consider what practical effects we can conceive the object of our belief to have and then our conception of those effects is the whole of our conception of the object. By extension, Peirce claimed that truth is to be understood as the result of an endless investigation (1931–1958, 5.565), which is concluded only upon the ultimate agreement of all investigators (1931–1958, 5.407). By implication, inquiry is never truly complete and so, consistent with phenomenology, we ought to question the habits of thought and action to keep our inquiry moving forward, ever accounting for the widest possible spectrum of perspectives. Moreover, Peirce's recognition that we work at our best when engaging in a cooperative (non-reductive) community to overcome common problems may be interpreted as an anticipation of contemporary interdisciplinary efforts within enactivism and systems theory.

Moving from methodology to ontology, the pragmatists, like the phenomenologists, have traditionally been deeply critical of metaphysics insofar as it is a pursuit of insight into reality itself. I argue that a particular vein of pragmatic reasoning is nevertheless consistent with Harris's use of generative phenomenology. It is first instructive to review precisely what metaphysical claims are being rejected within pragmatism. According to Putnam (2002), pragmatists disavow that: (i) there is a definite class of objects and properties that exist mind- and discourse-independently; (ii) the world can, in principle, be completely described by means of a single true theory, from a "God's-Eye View," and (iii) truth is to be understood as a non-epistemic relation of correspondence between propositions, sentences, etc. (i.e., the ultimate truth-bearers) and the non-linguistic items of the world itself. Following Kant's methodology and the later transcendental phenomenology, however, Pihlstrom (2011) has more recently argued that pragmatists can endorse metaphysics, insofar as it is a study of the historically changing and reinterpretable features of a reality that emerges in and through our inquiry and world-categorizing practices.

Metaphysics is thus reconceived as an examination of the basic features of a humanly categorized reality and the practice-embedded conditions necessary for us to be able to experience an objectively structured world. "Temporality is, therefore, a fundamental feature of the world we live in, even if nothing is 'fundamental' in the metaphysical realist's sense" (Pihlstrom, 2011, p. 95). Indeed, process philosophy has been consistently endorsed by pragmatists since its original formation and pragmatism has historically served as a unique bridge between process thought and phenomenology. Accordingly, the basic nature of reality must be understood as a constant flux of evolution, one which is continuous with our world-constructing activities.

As Pihlstrom argues, this creates what can be called transcendental pragmatism: "if we cannot expect metaphysics to deliver a view of the world in itself, we must carefully consider how exactly we humans contribute to 'constituting' the world, to 'structuring' it into what it is for us" (p. 98). Pihlstrom further recognizes that this is consistent with a methodological appeal to phenomenology in the service of uncovering the (transcendental) conditions of respective experiences, habits, and inquiries. If we cannot take a view from nowhere, we must always include the limitations of our knowledge and the habits that inform it within our metaphysical analyses. As Putnam maintained, there are no value-independent facts and no fact-independent values. This renders an inherent connection between metaphysics, epistemology, and ethics, implying that all are latent in our habitual inquiry of the world.

Traditionally, phenomenology has not attempted to develop a naturalistic explanation of consciousness, nor has it sought to uncover its biological genesis, or neurological basis, but has been concerned with attaining an understanding and proper description of the experiential structure of (what phenomenologists now call) our embodied mental life. On the analytic approach to metaphysics in general and mind in particular, the properties to be analyzed have either been taken as reducible to material events or rendered ideal. In neither case has sufficient attention been paid to how such forms have arisen in experience. Harris's focus upon genesis, I maintain, precisely addresses the blind spot in both analytic and phenomenological approaches today. In what follows, I argue Harris's system expands the phenomenological methodology into metaphysical discourse and provides yet unrecognized ontological contentions within the above pragmatist purview.

The Metaphysical Principles of Dialectical Holism

Though Harris (and I) would surely agree with the phenomenological emphasis on suspending the natural attitude and most metaphysical presuppositions, Harris's approach retains a distinctive Hegelian feature. On Harris's account, by emphasizing temporality, the genesis and maintenance of consciousness are reintroduced within the context of evolution (broadly construed) as a fourth universal feature of experience. This move, I maintain, may be understood as an elaboration of the third phase of classical phenomenological investigation:

1. *Static phenomenological analysis* determines the various types of experiences (parts of the invariant structure called "transcendental subjectivity") and their objects, e.g., the common experiential structures that are involved in how we learn a song, musical categories, etc.
2. *Genetic phenomenology* studies how the cognitive structures and the respective types of content develop through time. This presupposes prior knowledge of intersubjectivity and some lawful system(s), e.g., syntax,

semantics, and imagination. Here, initial rule-following such as categorically articulated movements for a particular skill habitualize until they establish a pre-reflective level of motor intentionality (called "secondary passivity" or automatization by Husserl).

3. *Generative phenomenology* concerns the historical, social, and cultural becoming of human experience. As static phenomenology is restricted in scope with respect to genetic phenomenology, genetic phenomenology is restricted in scope with respect to generative phenomenology. Whereas genetic phenomenology focuses on individual development without explicit analysis of its generational and historical embeddedness, the subject matter of generative phenomenology is the historical and intersubjective becoming of human experience.

I propose that Harris's approach effectively broadens and enriches (3) by arguing that the fundamental evolutionary process that has resulted in consciousness may be recognized within the generative dynamics of consciousness itself. This means Harris includes within this historical analysis a phenomenological account of how one's sense-of-self and world-as-a-whole co-emerge in and through evolution, broadly construed. He contends that an *explication* of this process may provide a non-reductive ontological foundation and guiding principles within the metaphysics of science.

Bringing together decades of research through the history of metaphysics and the natural sciences, Harris summarizes his conclusion in *The Foundations of Metaphysics in Science* as follows:

> It now transpires that a polyphasic unity is in essence a scale of forms progressively realizing, with continuous increase of adequacy the principle immanent in whole and part. It is a continuum of activity or process issuing in such a scale, in forms, or phases, of which are mutually related (i) as degrees of realization of the principle, (ii) as distinct specifications of its generic nature, (iii) as mutual opposites and (iv) as the reconciliation of oppositions lower in the scale. Each sublates the lower phase, all of which are carried up into and preserved in mutual interdependence in the higher phase that supersedes them. (1965, p. 483)

Harris found these "polyphasic unities" to be identifiable at every scale of nature, including the space–time system, the biotic sphere, and consciousness, each more complex, coherent and integrating through time. It has been argued elsewhere that these principles do indeed produce a phenomenological ontology consistent with a range of scientific theories from cosmology to consciousness studies (Schofield, 2021).

Common across most of his works, Harris begins by laying out what may be called a phenomenological foundation, an account of what he takes to be synthetic a priori first principles requisite for any consciousness of Nature. A crucial

question to follow is what is necessarily common across "objective" and "subjective" domains of analysis? Harris proposes that certain propositions about wholeness are fundamental for both scientific observation and philosophical investigation alike. Responding to Kant's question "what makes a priori synthetic judgments possible," Harris then proposes "a priori synthetic judgments would be established by the demonstration of the existence of wholes with internal relations between their parts, for once the principle of organization is known, universal and necessary judgments about the structure and its parts would be possible a priori" (1987, p. 75). For Harris, such a "synthetic whole" provides one's sense-of-self, laws of thought, and rules for individuation.

Harris maintains that without such presuppositions we would have no figure–ground distinction or object-focused attention. Metaphysics he says, "is the comprehension of the whole and the exposition of the principle of structure by which it is pervaded" (1988, p. 11). The task of metaphysics is thus to organize our experiences, both scientific and subjective, towards a single unity, "not simply to reveal the presuppositions of science but also, and more significantly, to trace the process, and presumably, to detect the reasons, for their changes" (p. 15). Though an ontological assessment of this synthetic whole will be developed below, I next outline what Harris considered to be its base conditions: (i) internal relations; (ii) process ontology; (iii) concrete universal; and (iv) explicative process.

Internal Relations and Process Ontology

For Harris, "dialectical logic" is the logic of system, the proper logic of science and metaphysics, one that both includes and surpasses transcendental and formal logic (1987, p. 131). Formal logic, according to Harris, can only posit external relations — relations that are external to their terms. This means the same terms can remain unchanged "in different external relations and the same relations can obtain between different terms" (p. 132). Harris argues however that if relations are external, "they fall between their terms, and then they fail to relate them or to bring them together […] a new relation must be sought between each of the terms […] so relatedness degenerates into an infinite regress" (p. 133). Hence, the first criterion of his synthetic a priori system:

(i) Internal relations: in any synthetic whole, the entities therein will be related in such a way that the nature of the terms depends on their mutual relations and vice versa.

Harris writes, "the membership of each part will be conditioned by its relations to the other parts, and it will be the member it is because of these relations and because the other parts are as they are" (2000, p. 112). The argument is that any identifiable entity must be part of some synthetic whole and its nature depends

upon certain relations within that system: relation R is internal iff it obtains between entity X and system Y, such that alteration of R results in an alteration of X and Y. One particularly important implication of this contention is that internal relations become necessary for identifying or individuating an entity. By epistemic extension, Harris (1983) summarizes dialectical logic thus:

> True explanation, or proof, in dialectical logic, is nothing more nor less than the tracing out of the development of the Concept (or whole) itself – its self-specification. It is the process of self-explication of the system of the real, and explanation is seeing, or finding the proper place of each phase and item in the light of the whole and its principle of order. (p. 171)

Following Whitehead (1929/1978), Harris's next axiom is that everything we consider to be concrete existence is more accurately understood as a process of becoming:

(ii) Process ontology: the nature of any entity is continually brought forth in virtue of interactions an entity has with its other (i.e., the whole to which it belongs), dynamical interactions which are necessary for its being.

Initially this can be framed in phenomenological and epistemic terms: if bodies, elements, or entities do not interact and relate in particular ways, we the observers cannot justifiably attribute any properties to them (nor can we be sure they exist). Towards an ontological conception, Harris claims the boundary of a whole is the locus of conflict that arises between a given whole and its other, i.e., its background or whatever is not the system. This conflict brings about what Harris describes as a vacillation "between denying its other and affirming its inevitable dependence upon it…" (1991, p. 18).

Crucially, we can see in Thompson's presentation of autopoietic enactivism a reiteration of this very metaphysical foundation, which combines Harris's first two axioms of process ontology and internal relations.

(a) Dynamic co-emergence: some wholes not only arise from their parts, but also give rise to their parts, meaning that part and whole are mutually dependent and each specifies the other. By implication, such a whole "cannot be reduced to its parts, for the parts cannot be characterized independently of the whole; conversely, the parts cannot be reduced to the whole, for the whole cannot be characterized independently of the parts" (2007, p. 38).

(b) Dialectical relations: Thompson maintains such relations will have the following characteristics:

(i) A determines B, and B determines A (bi-directional dependence or reciprocal determination); and (ii) neither A nor B is analyzable into discrete, causally efficacious elements that stand in a one-one correspondence (nondecomposability). Further, dialectical relations are dynamic, not static. Hence (iii) A alters B, and B alters A…. (pp. 68–69)

(c) Process heterarchy: taking (a) and (b) together, Thompson endorses an overarching framework of Nature that rejects hierarchy and supervenience:

In the process view, "up" and "down" are contextual-relative terms used to describe phenomena of various scales and complexity. There is no base level of elementary entities to serve as the ultimate "emergence base" on which to ground everything. Phenomena at all scales are not entities or substances but relatively stable processes, and since processes achieve stability at different levels of complexity, while still interacting with processes at other levels, all are equally real and none has absolute ontological primacy. (p. 441)

In a later work Thompson (2015) has posited what may be considered a tentative conclusion for the above theses by claiming that in enactivist ontology, "understanding how consciousness is a natural phenomenon is going to require a radical revision of our scientific concepts of nature or physical being" (pp. 103–104). He goes on to contend,

such an understanding would replace our present dualistic concepts of consciousness and physical being, which exclude each other from the start, with a nondualistic framework in which physical being and experiential being imply each other or derive from something that is neutral between them. (p. 105)

Importantly, following Harris, the resulting "dialectical wholes" serve as precisely such a neutral domain, in the sense that they are fundamental to both the structure-dynamics of phenomenology and respective scales of the natural world.

Silberstein and Chemero (2015) have been among the few to grapple with the issue of articulating an enactivist ontology, ultimately proposing an "extended neutral monism," which they claim is sufficient to "deflate the hard problem once and for all" (p. 182). Consistent with i–ii and a–c above, Silberstein and Chemero recognize that enactivism dispenses with qualia, essences, and substances, to reject the categorical divisions of mind/matter, inner/outer, self/world, and subjective/objective. They maintain such dichotomies do not result from some unquestionable datum of experience, but rather from "an inductive leap, an interpretation of our experience" (p. 186). Consequently, they recognize their account diverges from both physicalism and panpsychism, which rely upon atomistic units and intrinsic properties at some foundation of Nature.

In an effort to develop their ontology, Silberstein and Chemero (2015) have appealed to William James's neutral monism. James maintained that "we carve

out everything," just as we identify constellations to serve human purposes. Consequently, James maintained that there is no real distinction between unknown reality and the knowing consciousness, nor between objective matter and subjective mind. Reality, he claimed, is ultimately "pure experience," which is neutral between subjective phenomena and objective material events (James, 1904). Nevertheless, Silberstein and Chemero recognize that "invoking James has its drawbacks, because sometimes James talks of the 'stuff' of neutral monism as 'pure experience,' making it sound like phenomenalism or idealism. However, nothing should hinge on James's misleading names" (p. 186).

Towards a clarification of the "neutral ground," Silbestein (2009) has claimed that proponents of extended neutral monism should appeal to ontological structural realism, which provides support for the contention that relations characterize the neutral ground of Nature. To defend this move, Silberstein and Chemero have further appealed to the empirical research of J. J. Gibson's ecological psychology and dynamic systems modeling. They claim these theories provide empirical support for how our identity extends into a world of relations that we partially enact. Though this is a viable path to phenomenological ontology, their discourse ultimately leaves much to be desired regarding how we conceive of Nature independent of "inner/outer, self/world, subjective/objective" distinctions. I suggest that keeping with Harris's method, the neutral ground can be more effectively elucidated by developing the metaphysical principles that motivate appeals to such empirical theories, rather than merely resting content with a realist appeal to dynamic field theory, general systems theory, complexity, etc. Towards this end, I turn to the latter two axioms of Harris's system.

Concrete Universal and Explicative Process

In Harris's system, the Concrete Universal and explicative process are the most important terms to understand if one is to follow his arguments regarding evolution and the nature of consciousness. "Traditionally," Harris claims, abstract universals are understood as "a class under which its particulars are subsumed," while particulars are understood to be concrete, demonstrative qualities that compose individuals (1991, p. 23). Specifically, according to Newtonian physics and empiricist philosophies, particulars were concrete and universals were abstract. If we are to maintain internal relations however, a different conception is required:

(iii) Concrete Universal: for the widest sense of Being, an overarching principle must specify the physical relations that are possible and provide the conditions for the dynamical trajectories for the components therein (1965, ff. p. 467).

"A principle of this kind is universal because it prevails throughout the system and is universal to its parts. It integrates them into a single concrete whole..." (1991, p. 24).

Within a synthetic whole, Harris holds, the components must exist within a "continuum" organized into a space–time interval, for without which the respective elements could not interact, there would be no coherence, and the whole would be homogenous. Harris claims that a "homogenous whole" is contradictory because if its components are completely uniform and indistinguishable, there can be no continuity of relations and thus no identifiable whole. Simplifying with a 2D series, we can also see that there cannot be total irregularity: "For absolute irregularity means a total lack of continuity between the terms of the series, so that once again the continuum would be dissolved" (ibid). As a physical system, we can consider the following line of argument:

> Argument from Absolute Chaos
> P1. In a condition of absolute disorder, no principles, patterns, or laws can obtain.
> P2. To posit a state of nature is to distinguish an instance of order.
> P3. A state of perfect symmetry is one that lacks all contrasts, patterns, and regularity, i.e., order.
> P4. To posit a state of nature in perfect symmetry is tantamount to saying there is a state of matter that is no-thing, i.e., abstract homogeneity.
> _____
> C1. Therefore, nature can never be in, nor arise from a state of absolute disorder or perfect symmetry.
> C2. Any disorder or randomness of the Universe presupposes self-differentiated order.

Positing such a system as totally homogenous or totally random amounts to what Harris calls the "fallacy of spurious homogeneity" (1965, p. 462). If the parts do not differ, at least in position, "space collapses to a single point; and a single point apart from and unrelated to other points is nowhere, and so no point in space" (1987, p. 138). Importantly, it should be noted that this threat of positing homogeneity exists both in the simplest beginning of Nature (in the form of a singularity) and in its end (via entropic heat death). Harris claims that randomness is always relative to order, "order is prior to disorder; and the primary form of order is continuous seriality in a heterogeneous but graded scale of overlapping terms" (pp. 139–140). This Harris claims, will be true for every synthetic whole of nature.

Though he never mentions neutral monism, Brender (2013) provided a neutral terminology that I contend provides a clarification of Harris's above contention regarding the Concrete Universal. According to Brender, the true relationship between symmetry and form is not intuitive. Symmetry, he explains, is defined as invariance under transformation, hence the greater possible transformations the greater the symmetry. "Contrary to what we might expect, then,

greater symmetry does not imply greater order or structure. On the contrary, the greatest symmetry belongs to structureless uniformity…" (p. 267). Crucially then, form only arises due to a symmetry breaking that introduces differences, so disorder is more symmetrical than order. "Thus the question of the genesis of form is not how symmetry arises out of disorder, but rather how the symmetry of disorder gets broken in determinate ways to produce the characteristic asymmetries of the forms we find in nature" (p. 267).

According to Brender, symmetry breaking provides a means of overcoming the opposition between being and non-being, along with that between form and matter. Being is no longer defined by self-identity, but rather by self-differentiation. The opposite of being is not non-being or negation, but the absence of negation — uniformity or indifference (p. 269). Brender proposes that, following Merleau–Ponty, the "new ontology" of enactivism, the "milieu" common to philosophy and the natural sciences that serves to unite the phenomena of form and morphogenesis, thereby solving the Cartesian problem, is the process of symmetry-breaking (p. 272). Indeed, symmetry breaking is as essential within phenomenological analysis as it is within empirical dynamics, e.g., nucleosynthesis, emergence, phase transitions, embryogenesis, morphogenesis, and symbiogenesis.

Taking Brender and Harris together on these points implies that the whole of Being must be characterized by Concrete Universal constraint, which is transferred via symmetry breaking to each of its sub-domains, or unifying principles, which characterize the dynamics of respective sciences and phenomenological gestalts.

(iv) Explicative process ($\mathfrak{E}$): when applied to the whole of Being, internal relations, process ontology, and the Concrete Universal result in the generation of a scale of forms.

The "self-differentiation of system," Harris writes, involves the "explication of a totality," an "interplay of unity and diversity" that must be understood as "a perpetual dynamic activity," but one "prior to all temporality and process because it is already involved in any succession or movement" (1987, pp. 144–145). In other words, temporal change is believed to be a facet, not an exhaustive depiction of $\mathfrak{E}$. In this process, each whole that arises supersedes, includes, and transforms those beneath it, while implicating those that may yet develop: "progressing by successive steps, from a primitive element up the scale of degrees of more adequate manifestations of the universal principle, the totality that is immanent in every element and every phase of the process develops" (1991, p. 20). Hence, the process is creative, self-referential, and teleological.

In nature this process is ongoing; the immanence of the whole in its parts drives the components from contradiction to supplementation, augmentation, and completion — the forms emerge with increasing clarity as more complex relationships come into being (2000, pp. 108–109). "So the process of successive unifications of

opposites is propelled toward the generation and eventual achievement of greater wholeness" (p. 113). Harris holds that a "scale of this kind is dialectical because it proceeds through opposition and distinction which is at the same time complementary, interdependence and mutual identity" (1991, p. 20). The Concrete Universal (or the form of all forms) thus exerts a conatus that "differentiates itself" into each of its respective phases or unifying principles (p. 24). Hence, Harris's $\mathbb{C}$ is identifiable with Brender's phenomenological ontology plus an evolutionary telos:

> wholeness, by its very nature, involves dynamic and dialectical self-specification, by way of self-enfoldment (with consequent overlap of specific forms). It tends towards intensification of centreity, increasing self-sufficiency and widening comprehension, and culminates as an all-embracing awareness of an all-encompassing world. (p. 26)

Anthropic Reasoning

What can be understood about the nature of the universe from examining the enabling conditions of observers within our cosmic horizon? To address this question is to consider the anthropic cosmological principle, which was so named and then elaborated into strong and weak versions by Brandon Carter (1974). Carter later lamented that the term was improper because it is not primarily concerned with human beings, but refers to the relationship between the physical conditions necessary and sufficient for the emergence of complex systems in a given spacetime region: observations of the cosmos must reveal physical parameters of a universe that are capable of supporting the emergence of observers.

Hence, much like transcendental phenomenology, the anthropic principle is used to constrain our physical theories by accounting for the presence of and necessary conditions for observers. I maintain that following Harris's phenomenological methodology combined with a pragmatist framework can produce a version of the strong anthropic principle that enactivists will be hard-pressed to reject.

Phenomenological Epistemology

According to Harris, the unavoidable use of metaphysics in scientific philosophy and phenomenology requires that one take as first principles both the observer's existence and the Universe (the whole within which we obtain). The development of knowledge then proceeds as follows: "Self-awareness and reflection go hand in hand with an insistent demand for self-knowledge, for understanding of ourselves and our place in the world; and that demand carries with it the inevitable need to unify and systematize our experience of that world and of ourselves" (1988, p. 11). Hence, on Harris's account, to have self-knowledge requires a systematized worldview, one that relies upon empirical observations

and is organized by metaphysics. He further maintained that the anthropic principle is "scientific" and "if respected, can give rise to significant observational predictions crucial to the acceptance of cosmological hypotheses" (1991, p. 1). This is to say that recognizing inherent selection effects in what and how we conceive of the Universe is necessary for scientific progress. So, while our view of the world is inherently biased by our selection effect(s), critically assessing this bias results in ever clearer depictions of both cosmos and mind.

In support of this line of reasoning, Gunn (2011) points out that "as a whole," the Universe "is not an object of experience, nor can it ever become such" (p. 258). Gunn goes on to argue that even if we could somehow "transcend" the Universe and "reengage it," our object would now only constitute part of the Universe proper. Hence, the universe remains "beyond all empirical determination" (ibid). Following Husserl's phenomenology, Thompson (2007) contends that we find a similar notion concerning the structure of experience:

> Anything that comes forth, manifests, or emerges does so in an open clearing or expanse, delimited by a horizon. The horizon of every possible horizon is the world. Yet the world-horizon cannot be the synthesis, totality, or mereological sum of all these possible horizons because it is pregiven or a priori with respect to any of them and thus is sui generis. (pp. 35–36)

To say that the world-horizon cannot be reduced to any material or other formally constructed conception is to point out, with Harris, that Nature-as-a-whole is a synthetic a priori principle; one that is from our vantage point both necessary and inherently incomplete. Moreover, the world horizon so articulated is neither objective nor subjective, but intersubjective. Consequently, I argue, enactivists are obliged to embrace a participatory anthropic principle, which arises as an epistemic constraint concerning the relationship between any subject(s) and Nature-as-a-whole.

In support of such a participatory anthropic principle, Brender speaks to the incompleteness of our horizon by arguing that cognition is contingent upon the asymmetry of an environment, upon which a body may act. This is a clear appeal to the gestalt emphasis upon figure–ground differentiation: bodily movement, he claims, is the original "transformation," which discovers asymmetries in its surroundings by producing variations in the body's perceptual field. The particular asymmetries a body perceives will depend on its particular way of moving and the unique motor habits it has developed over the course of its life. Crucially, as our movements become more complex and asymmetrical, so too does the world we perceive. Thus, the organism and its world grow together dialectically, each driving the other to become more articulated and determinate (p. 268).

Brender argues that ironically nothing could be more anthropocentric than the attempt of mechanistic science to "strip nature of all anthropological predicates in order to arrive at an account of reality as it exists 'in itself'" (ibid). A world that

can only be known from "outside," he maintains, could not have any intrinsic sense or meaning at all, only that which is imposed on it by those who manage to control and master it. Brender proposes that the ontology of asymmetry provides an endogenous sense to nature. The autogenesis of sense in nature takes place through symmetry-breaking, in which natural wholes articulate themselves into parts or regions (i.e., "unifying principles"), creating differences out of indifference and form out of uniformity. These differences are neither things nor ideas, neither atoms nor artifacts; they cannot be known by a disembodied mind, but only perceived by a living body (p. 270). For Brender, the goal of science then is to permit a natural phenomenon to reveal "which difference make a difference to it," and this entails continually learning to recognize differences that were previously unrecognized while at the same time discounting those that were considered "relevant." Brender concludes that the mechanistic scientific project has thus failed for deciding a priori "how nature is to be divided" (p. 270).

In this vein, Thompson (2015) further argues that the scientific method provides us no access to consciousness that is independent of consciousness. This means that the intersubjective confirmation of perceptual experience that "necessarily presupposes empathy or the recognition of others as having the same kinds of experiences as oneself, are the bedrock of experimental science" (p. 99). Specifically, he holds the scientific method (including asking questions, formulating hypotheses, doing background research, analyzing data, and communicating results) is possible and intelligible as a human activity only by presupposing consciousness (pp. 99–100).

> The upshot is that there's no way to stand outside consciousness and look at it, in order to see how it fits into the rest of reality. Science always moves within the field of what consciousness reveals; it can enlarge this field and open up new vistas, but it can never get beyond the horizon set by consciousness. In this way, direct experience is primary and science secondary. (p. 100)

Accordingly, we can never acquire an objective measure of consciousness by something outside of consciousness, and consciousness never occurs without a context of embodiment, which likewise only occurs within the phenomenological horizon. Only by holding these two points together, Thompson contends, and privileging neither one over the other, can we establish a natural theory of consciousness. The primacy of consciousness is thus considered methodological, epistemological, and now existential: "Consciousness is something we live, not something we have. […] Consciousness is our way of being, and it cannot be objectified […] because it is that by which any object shows up for us at all" (p. 100). More formally then, the following epistemic argument may be derived from the phenomenological contentions elucidated thus far:

Epistemic Interdependence of U and C

P1. The constraint of one's immediate phenomenological horizon (C) is a legitimate a priori first principle.

P2. Positing C requires some inferred "world horizon" of a system (U) to which C relates (i.e., ¬C), within which C obtains, and by which C can be known.

P3. Certain parameters necessary and sufficient for defining U and C respectively are covariant such that alteration to one side (e.g., embodied constraints) entails some corresponding alteration(s) to the other (e.g., physical laws).

P4. Entities are epistemically interdependent iff changing the defining nature of one necessarily constrains the ontological statements that can be made of the other.

P5. If the whole of U and C are beyond exhaustive empirical analysis but assumed to materially obtain, then propositions about their relation are synthetic a priori.

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C1. The existential relationship between U and C ($\exists^R$) is an a priori synthetic proposition.

C2. U and C are epistemically interdependent in virtue of $\exists^R$.

C3. Any complete account of either U or C must include a complete account of the other.

Importantly, this means that while our immediate horizon (C) of phenomenology is situated within and conditioned by Nature (U), any conception of matter proposed by science is conditioned by and situated within our phenomenological horizon. Being phenomenologically honest then, any Universe (or multiverse) we posit is by necessity conditionally dependent upon the necessary and sufficient conditions of conscious observers. Crucially, although unrecognized, Thompson's phenomenological approach provides a topo-logic for extended neutral monism. Namely, this view depicts mind as a torsion of Nature-as-a-whole.

Phenomenological Ontology

Taking the above remarks together reveals that rather than attempting to distil a metaphysical conception of basic building blocks, proponents of such a phenomenological ontology are obliged to posit a single and dynamical field stretching across both "physical" and "phenomenal" domains. To our observation this field exhibits self-differentiation into a series of wholes or a scale of forms. Each scale produces gestalts that characterize respective domains of sensitivity, such as cultural contexts and scientific disciplines. However, these domains must be recognized as abstractions from an inferred neutral whole of Nature. Moreover, conceptions of "higher" and "lower" are contextually relative to our embodied relations with the world, and as argued above, our embodied relations remain irremovable and irreducible.

I argue that the consequence of these commitments is that proponents of extended neutral monism and autopoietic enactivism are obliged to endorse a teleological interpretation of the anthropic cosmological principle. Invoking a brand of teleology derived from Kant and Hegel, Harris maintains that "Explanation would be 'teleological' if it made the parts of a whole intelligible in terms of the organizing principle that constituted them a totality, or processes understandable in terms of the dynamic system to which they belonged" (1965, p. 262). According to Harris, extending the insights from systems theory to philosophies of science and mind requires that phenomena at every scale reveal self-organising or "unifying principles," each a partial reflection of Nature-as-a-whole, which Harris considered to be a "Concrete Universal" (1965; 1988, ff. p. 10; 2000, ff. p. 96; 2006, ff. p. 143).

At this point it is relevant to return to his argument concerning the "fallacy of spurious homogeneity." Harris contends that insofar as we wish to deny the reality of independent abstracta, Nature must be conceived as a constrained and dynamical (i.e., self-differentiating) whole. His conception of teleology was thus based on the idea that the Concrete Universal was akin to the whole of a fractal curve, which specifies a scale of unifying principles therein (e.g., quantum, relativistic, living, and neurodynamic), each with their own emergent and necessitated laws of constraint (1991, ff. p. 26, p. 168). Like the development of a seed into a tree, an embryo into an adult, or the enactment of a musical score, for Harris the aim is not some final state, "but the symphonic whole" (1991, p. 168). What these metaphors purportedly exemplify is that "the activity is the goal in the making, and the goal is what the activity is all the time generating" (2000, p. 135).

I propose that maintaining Brender's and Thompson's insights not only leads proponents of extended neutral monism to Harris's teleological anthropic principle, but provides a much richer way of interpreting and endorsing this principle. Particularly, the bind between phenomenality and Nature that appears to follow from Thompson's remarks implies that it would be incoherent for a proponent of extended neutral monism to posit the possibility under some conditions of the Universe being devoid of consciousness. This is because doing so removes our embodied relation to Being and thereby reduces Nature (the world horizon) to a mere abstraction. With this, Harris would be in total agreement not merely for pragmatic and epistemic reasons, but because he maintained consciousness is necessarily one such unifying principle of Nature. If indeed consciousness is such a fundamental transformation of Nature, significant argumentation is needed to account for this transformation in topological or dimensional terms.

Towards a Phenomenological Topology

This brings us to the work of Steven M. Rosen, whose longstanding proposal (1994–2021) for a topology of phenomenology may elucidate the torsional interdependence

between mind and Nature posited above. Following Peirce's semiotics, in line with extended neutral monism, our first obstacle is to dispense with the assumption of object-in-space-before-subject. Rosen proposes that the "intuition of objects in space cast before the fixed gaze of a detached subject can be supplanted by a phenomenological intuition of the dialectical interplay of object, space, and subject" (2008, p. 69). He contends that topology, defined as "the way a thing makes a place in the world" could provide an ontological re-grounding of physics that avoids the division of object from subject (2013, p. 7). In pursuing this phenomenological intuition our task is essentially to signify Being in some way that avoids linguistic representation, because such methods render "Being as an other, a free-floating semantic object cast before the reading subject" (2014, p. 253). This, Rosen says, would be an act of abstraction, which misses the concrete nature we aim to signify precisely because Being cannot be understood from a purely objective standpoint.

To make his case, Rosen begins by illustrating a solid cube, noting that under normal circumstances we cannot view our object from all sides simultaneously. In the case of the Necker cube however, two perspectives can be superimposed. This feature thus demonstrates a dialectical relation between opposing perspectives. In the case of touching one's own hand, we find a similar situation: "while what was subject can be known as object a moment later, I cannot know subjectivity as such. The subject is still the one who does the knowing, while the object remains that which is known" (2014, p. 257). Here, he claims there is likewise a dialectical relation between subject and object and a continuous switching from one to the other, but the subject cannot be completely transformed into the object. This poses a gap that both Rosen and Merleau–Ponty maintain is not ontological, but epistemic, in that we cannot see (or objectify) our own seeing — such a perspective remains hidden despite our ability to infer its possibility.

However, Rosen holds the Necker cube is limited as an iconic sign-vehicle of Being because "the cube itself appears as but an object cast before our detached gaze" (2014, p. 259). An important factor that is highlighted in the cube's inadequacy is dimension. Though the cube simulates three dimensions, it is not solid, but a one-dimensional line structure embedded within a two-dimensional space. Rosen proposes that what we require is something beyond a merely abstract signification of Being; we require a semiotic body that "could be read in such a way that while standing before us, it would also stand within us" (p. 260). Towards this end, he first exhibits the Moebius strip, which unlike the single side of the cylindrical ring, "is one-sided in a paradoxical sense, one-sided and also two-sided, for the local distinction between sides is not simply negated with expansion to the Moebius as a whole" (p. 262). In this case there are differences of inside and outside, yet they are also continuous. Nevertheless, the Moebius strip is merely

a two-dimensional model and thereby objectifies the subject–object paradox of Being. If left- and right-oriented Moebius strips were welded together however, the resulting Klein bottle would satisfy our signification of Being.

In classical mathematics the resulting Klein bottle is conceived as being embedded in a higher dimension, which preserves its continuity but renders the structure abstract. Rosen suggests however that thinking of the Klein bottle in this way avoids contending with its concrete discontinuity, i.e., its hole. Following Merleau–Ponty's conception of "depth" (1964, p. 180), Rosen suggests that the discontinuity of the Klein bottle provides an intuitive phenomenological means of signifying a first dimension, from which all others can be derived, and in which subject and object are fused (2014, p. 269). Rosen thereby takes the Klein bottle to be at once the "signifying" and "signified object" (p. 270). This self-signification, Rosen maintains, involves three contained dimensions plus a fourth dimension that realizes "concrete self-reference" and reflects our lived subjectivity. While the Klein bottle presents a single surface that is simultaneously "open" and "closed," three regions are distinguished (Figure 1, my development upon Rosen's model), which provides a phenomenological means of experiencing how contained, uncontained, and containing spaces can be dialectically related within a "self-containing" whole.
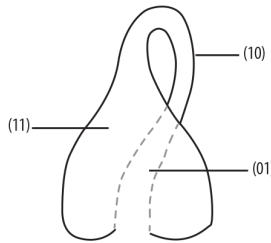

Figure 1: Topological phenomenology.

These three interrelated stages of phenomenological self-reflection can be roughly distinguished by orders of complexity and must be understood as cyclic in nature.

(01) The contained consists of bounded and finite relations, focal "facts," structures, and objects. In this primitive form, subject/object, past/present, inside/outside remain undifferentiated.

(10) The uncontained denotes the agent in relation to their object via historical actions from one to the other, thereby revealing a temporally situated lifeworld.

(11) The containing space enables reflection upon the relation between focal fact and historical context. This represents a "proprioceptive circulation," wherein the identities of subject and object become fused. The synthesis of this stage itself becomes the object upon a return to (01).

Following Rosen, though examining our experience of ordinary objects tends to reinforce an intuitive subject–object split, proprioceiving one's experience of the Klein bottle should facilitate such an embodiment of self-containment: "if the Cartesian gap between subject and object is to be bridged, the property of self-containment is what must be digested…" (2014, p. 273). This proprioceptive act is here not merely accomplished with one's eyes, but is cognitive, which means that viewing the self-containment of the Klein bottle requires engaging our whole being.

The means by which any such whole can be identified in nature is thus traced back to the synthetic constraint of conscious self-containment. However, the gestalt field of self-consciousness both depends upon and gives rise to the simultaneous inference of an other, which is beyond all empirical determination and is itself equally synthetic a priori. This other is, in its widest manifestation, the presumed constraint of Nature-as-a-whole (the world horizon), which has permitted the synthetic act(s) of consciousness. Following a phenomenological methodology then, we are obliged to say that the givenness of the world is facilitated by something beyond mind, yet all of nature is constrained by the synthetic a priori act of conscious self-containment. This does not result in a paradox, but posits a torsion to the field of phenomenology, in which both mind and nature each contain and constrain the other.

Harris appears to have anticipated Rosen's phenomenological topology. He argued the problem of the transcendental ego has neither been resolved nor avoided in previous phenomenological efforts (e.g., Husserlian or Heideggerian) because in either case,

> relationships are being posited, awareness of which, even though only incipient, requires synthesis of a manifold in the Kantian sense, spontaneous and a priori, which can only be attributed to an apperceptive subject logically and ontologically prior to any of the related terms (one of which is Dasein). [1988, p. 95]

Harris contends that because our cognitive act of synthesis is always prior to "matter" we must confront a paradoxical situation: "On the one hand, Dasein is in the world, but at the same time, on the other, there is an important sense in which the world is in Dasein" (p. 96). His solution was to maintain a co-emergence of consciousness and the world, in which consciousness is "the entire scale of forms, dialectically related each to the next, as which the universal principle of organization has specified itself — the very process through which the mind has been generated. What becomes object is itself the autogenesis of the subject" (2006, p. 163).

This is to say the object of the mind is the world in becoming, it is the self-reference of $\mathfrak{C}$, and "the subject is no less than the world come to consciousness of itself" (1991, p. 115). Taking the above contentions from Harris, pragmatism, enactivism, and Rosen together, we arrive at the following teleological conception of consciousness:

Dialectical Argument for the Teleological Anthropic Principle

P1. Teleology: obtains iff particular entities X, bear a dialectical relation to their wider system Y, such that the physical context of Y necessitates the manifest dynamics of some composition X.

P2. Consciousness as torsion: following a phenomenological methodology, the self-referential gestalt ($\exists^R$) serves as both context for and composition of evolution ($\mathfrak{E}$).

P3. Principle of pragmatic coherence: non-trivial claims about our world that are necessitated by our epistemic system as a whole and are not expected to be reduced or altered given future inquiry, serve as our founding ontological principles.

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C1. $\exists^R$ bears a dialectical relation to $\mathfrak{E}$ and thus satisfies the principle of pragmatic coherence.

C2. As $\mathfrak{E}$ appears irremovable and self-referential across phenomenal and material domains, the necessity of consciousness within nature is asserted on pragmatic ontological ground.

So, if Being may be characterized as a scale of forms, as Harris has articulated and enactivists have implied, then Rosen has here provided a topological analysis of our being-in-relation to this scale of forms. Accordingly, the inside–outside dichotomy is rejected, and Dasein becomes a torsion of Nature, simultaneously containing and being contained by any objective conceptualization. Following a phenomenological methodology thereby results in this topological structure as both experiential form and icon of Being. As a global topological feature of Being, Dasein is thus irremovable and necessitated by any conception of Nature.

Conclusion

I have argued that the underlying metaphysical principles of enactivism and Harris's dialectical holism are sufficiently complementary to derive a convergent phenomenological ontology. Towards this end, Rosen's Klein bottle logic may serve three functions within an extended neutral monism paradigm informed by Harris's holism: (i) it serves as a phenomenological icon of Harris's Concrete Universal and unifying principles; (ii) it provides further ontological grounding for Brender's conception of symmetry breaking as the neutral ground of nature; and (iii) it further elucidates the relation between mind and nature.

Regarding the latter point, those who invoke the fundamental axioms of dialectical holism, as I have shown enactivists and proponents of extended neutral monism are poised to do, are further obliged to follow Harris in admitting the inextricable interdependence between mind and Nature. This paper has shown that as a dialectical relation, this interdependence is not epistemic or ontological,

but onto-epistemic. This is to say that the necessity of consciousness is posited on pragmatic, phenomenological, and metaphysical grounds. Consequently, I contend that the above line of reasoning, built upon dialectical holism and enactivist principles, provides a sufficient foundation for a phenomenological ontology that is sophisticated enough to respond to many of the traditional metaphysical debates (e.g., laws of nature, time, properties, universals, and mind) and that this challenge must be addressed.

References

Brender, N. M. (2013). Sense-making and symmetry-breaking: Merleau–Ponty, cognitive science, and dynamic systems theory. *The Canadian Journal of Continental Philosophy, 17* (2), 246–270.

Carter, B. (1974). Large number coincidences and the anthropic principle in cosmology. In M.S. Longair (Ed.), *Confrontation of cosmological theories with observational data. International Astronomical Union/Union Astronomique Internationale, Volume 63* (pp. 291–298). Dordrecht: Springer.

Gallagher, S., and Zahavi, D. (2012). *The phenomenological mind* (second edition). New York: Routledge Press.

Gibson, J. J. (1950). *Perception and the visual world*. Boston: Houghton Miflin.

Gunn, D. (2011). *Pneumatology of matter*: *A philosophical inquiry into the origins and meaning of modern physical theory*. Winchester, United Kingdom: Iff Books.

Harris, E. E. (1965). *The foundations of metaphysics in science*. London: Allen and Unwin.

Harris, E. E. (1983). *An interpretation of the logic of Hegel*. Washington D.C.: The University Press of America.

Harris, E. E. (1987). *Formal, transcendental and dialectical thinking: Logic and reality*. Albany, New York: State University of New York Press.

Harris, E. E. (1988). *The reality of time*. Albany, New York: State University of New York Press.

Harris, E. E. (1991). *Cosmos and anthropos: A philosophical interpretation of the anthropic cosmological principle*. Atlantic Highlands, New Jersey: Humanities Press International,

Harris, E. E. (2000). *The restitution of metaphysics*. Amherst, New York: Humanity Books.

Harris, E. E. (2006). *Reflections on the problem of consciousness*. Dordrecht, Netherlands: Springer,

Hegel, G. W. F. (1977). *Phenomenology of spirit* [A. V. Miller, Trans.]. Oxford: Oxford University Press.

Heidegger, M., Stambaugh, J., and Schmidt, D. J. (2010). *Being and time*. Albany, New York: State University of New York Press.

Husserl, E. (1982). *Ideas pertaining to a pure phenomenology and to a phenomenological philosophy* [first book, F. Kersten, Trans.]. Boston: Kluwer.

Husserl, E. (1989). *Ideas pertaining to a pure phenomenology and to a phenomenological philosophy* [second book, R. Rojcewicz and A. Schuwer, Trans.]. Boston: Kluwer.

James, W. (1904). A world of pure experience. *Journal of Philosophy, Psychology, and Scientific Methods, 1*(20), 533–543.

James, W. (1981). *The principles of psychology*. Cambridge, Massachusetts: Harvard University Press.

Kant, I., (1998). *Critique of pure reason* [P. Guyer and A.W. Wood, Trans.]. New York: Cambridge University Press.

Leahey, T. H. (2000). *A history of psychology: Main currents in psychological thought* (fifth edition). Saddle River, New Jersey: Prentice–Hall.

Merleau–Ponty, M. (1962). *Phenomenology of perception* [C. Smith, Trans.]. London: Routledge.

Merleau–Ponty, M. (1964). Eye and mind. In J. M. Edie (Ed), *The primacy of perception* (pp. 159–190). Evanston, Illinois: Northwestern University Press.

Peirce, C.S. (1931–1958). *Collected papers of Charles Sanders Peirce* (eight volumes). C. Hartshorne, P. Weiss, and A.W. Burks (Eds.). Cambridge, Massachusetts: Harvard University Press.

Pihlstrom, S. (2011). Metaphysics. In S. Pihlstrom (Ed.), *The continuum companion to pragmatism* (pp. 92–100). New York: Continuum International Publishing.

Putnam, H. (2002). *The collapse of the fact/value dichotomy and other essays*. Cambridge, Massachusetts: Harvard University Press.

Rosen, S. M. (1994). *Science, paradox, and the Moebius principle: The evolution of a "transcultural" approach to wholeness*. Albany, New York: State University of New York Press.

Rosen, S. M. (2008). *The self-evolving cosmos: A phenomenological approach to nature's unity-in-diversity*. Singapore: World Scientific Publishing.

Rosen, S. M. (2013). Bridging the "two cultures": Merleau–Ponty and the crisis in modern physics. *Cosmos and History: The Journal of Natural and Social Philosophy, 9*(2), 1–12.

Rosen, S. M. (2014). How can we signify being? Semiotics and topological self-signification. *Cosmos and History: The Journal of Natural and Social Philosophy*, *10*(2), 250–277.

Rosen, S. M. (2021). The strange nature of quantum perception: To see a photon, one must *be* a photon. *Journal of Mind and Behavior*, *42*, 229–270.

Schofield, J. P. (2021). *A phenomenological revision of E. E. Harris's dialectical holism*. Cham, Switzerland: Palgrave Macmillan [Springer Nature].

Silberstein, M. (2009). Why neutral monism is superior to panpsychism. *Mind and Matter*, *7*(2), 239–248.

Silberstein, M., and Chemero, A. (2015). Extending neutral monism to the hard problem. *Journal of Consciousness Studies*, *22*(3–4), 181–194.

Thompson, E. (2007). *Mind in life: biology, phenomenology, and the sciences of mind*. Cambridge, Massachusetts: Belknap Press.

Thompson, E. (2015). *Waking, dreaming, being: New light on the self and consciousness from neuroscience, meditation, and philosophy*. New York: Colombia University Press.

Whitehead, A. N. (1978). *Process and reality*. New York: Free Press. (originally published 1929)